

DAMAGE TOLERANT SHAFT AND ASSOCIATED FABRICATION METHOD

ABSTRACT OF THE DISCLOSURE

The damage tolerant shaft and associated method of fabricating a damage tolerant shaft provide a drive shaft that is tolerant of accidental and projectile damage to a portion of the drive shaft. The damage tolerant drive shaft is designed with internal ribs or lobes, such that a closed portion of the drive shaft will likely remain after the drive shaft is partially damaged. Thus, the damage tolerant drive shaft is able to continue proper operation after being partially damaged because the closed portion of the shaft creates a closed path around which the internal shear stresses that correspond to the required torque loads flow. In addition, the damage tolerant shaft and associated method provide damage tolerance without increasing the radius, wall thickness and/or weight of the drive shaft.

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